

DASGIP Control 4.0

New Standard in Parallel Operation and Automation

Technology

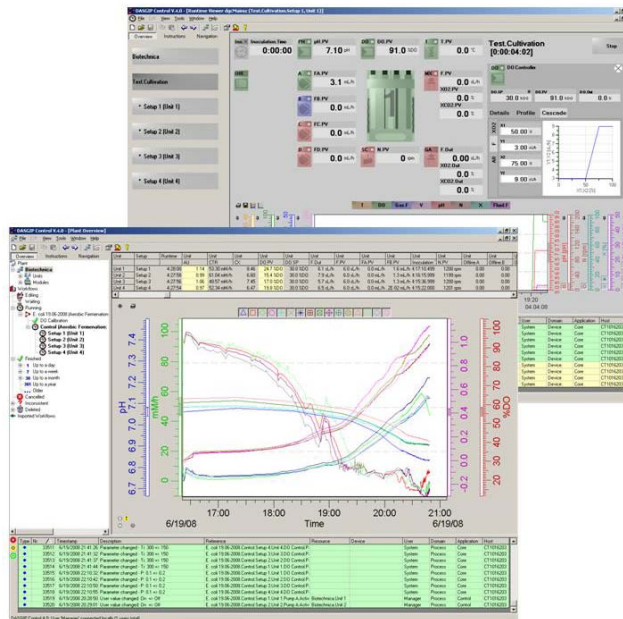
DASGIP software Control 4.0 combine's well-tried features of conventional bioreactor control software with numerous extra options for comprehensive process data management. Due to the parallel design of the software and the DASGIP Parallel Bioreactor Systems up to 16 vessels can be operated at the same time. A data mining wizard gives the possibility of systematic data retrieval and comparison of different cultivation data-sets for a detailed and extensive data processing using a SQL like query interface. OPC connectivity opens the possibility for at-line integration of external data, thus addressing different degrees of lab automation as well as communication with third party supervisory process control systems and historians.

Application

DASGIP Control 4.0 is developed for the use in parallel cultivation with the DASGIP Parallel Bioreactor Systems for microbiology and cell culture. Users benefit from intuitive process views, parallel sensor calibration procedures, online profile editors with user defined functions as well as free configurable charts and enhanced triggering automation.

■ The reactor view

In addition to the common numeric process overview all relevant online parameters and events including e.g. pH, DO, OD or off-gas can be observed using the graphical reactor view. Furthermore with the new DASGIP Control version, user defined manual offline readings and OPC at-line values are integrated into the different views. Colored symbols show the state of all important devices and functions. A simple mouse click switches between all actual process views. Due to the



large 19" display all process values, charts and event logs are visible coevally even while online editing.

■ Online editing and user defined functions

With the new version of DASGIP Control software users gain an ultimate online flexibility combined with an optimized way for editing functions and scripts. All process views including online charts and graphical previews can be edited during a bioreactor run. Range limits, setpoint profiles and the freely editable DO cascade wizard can be changed online and thereby individually adopted. Offline values and events can be manually recorded at run time and documented with a time stamp.

■ Enhanced triggering automation package

The point and click configuration of the flexible and powerful triggering profiles enables a comfortable use of various process values and time stamps for the activation of predefined profiles. pH shift triggered temperature reduction in protein expression, DO₂

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activated substrate feed with time delayed inductor feed in *E. coli* fermentations or the automated change of the culture media linked to defined cell density in animal cell culture are among the possible applications.

■ Data mining option

Targeted retrieval of process data and user defined pre- and post-process data like recipes, biological background information, external analytics or results as well as a comprehensive comparison of different datasets stored in the database are facilitated by a SQL like query interface. Not only the comparability of data from successive experiments but also the analysis of historical data under new foci is possible. The integrated documentation wizard features a one click export to MS Excel in which the full setup documentation with run-

time process and analyzer data, events, user inputs as well as all data mining categories are documented.

Benefits

DASGIP Control 4.0 represents a comprehensive process information management system. Users in research and process development benefit from time saving configuration, easy integration of external data, comprehensive data management and analysis tools as well as OPC connectivity. DASGIP users obtaining superior results in terms of reproducible and scalable results as well as enhanced productivity are enabled to even accelerate the product development cycle, e.g. by factorial designed experiments.

Technical Data

Features

- Online monitoring and control of standard process parameters as well as off-gas, redox, OD, level and anti foam
- Time and process based feeding strategies and cyclic perfusion
- Online editable DO cascade wizard
- Improved parallel sensor calibration
- Enhanced triggering automation package
- Integration of external analysers and autosamplers via OPC connectivity
- Monitoring of external signals
- Data mining wizard for targeted data retrieval and comprehensive information management

Hardware Specifications

- Intel Pentium 4 CPU > 3 GHz
- S-ATA hard disc > 120 GB
- DVD burner
- 19" LCD monitor
- MS-Windows XP Professional ® or MS-Vista®
- MS-Office 2007 ®

Software Specifications

- Parallel process control for up to 16 reactors with individual parameter set up
- Integrated process planning and recipe management
- Parallel calibration and cleaning procedures
- Online editable user defined functions
- Scripting with graphical online preview
- Online changeable controller parameters and profiles (constant, table, script)
- Variable logging intervals for optimal degree of details
- Free defined software triggers for process automation
- Integration of user defined content information
- Data export and documentation wizard for MS-Excel ®
- Professional database with access control (MS-SQL-Server ®)
- User management with access control and automatic logout
- Configurable online charts support zooming, scrolling, save and restore
- Integrated automatic backup and optional remote access